Perception of disability as a barrier for Canadian medical students

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Individuals with disabilities face barriers that affect their ability to complete daily activities. As described by the Americans with Disabilities Act and the Accessible Canada Act, the term *disability* is broad and can involve physical, sensory, learning, psychological, and chronic health conditions.[1,2] Polling data from the 2012 Canadian Survey on Disability examined several types of disabilities including pain, mobility, mental or psychological, and sensory.[3] These data estimated that 13.7% of Canada's population aged 15 years or older report having a disability, while only 11.2% of practising Canadian physicians report having a disability.[4] However, the data from this report[3] fail to provide precise information regarding the categories of disability existing in each population. While this makes it impossible to compare the two populations, it demonstrates the importance of further research and targeted data collection. Data from the United States (US) demonstrate a greater divergence between groups, as approximately 20% of the general population and only 2% of practising physicians reported a disability.[5]

Further discrepancy exists when examining the prevalence of disability among medical students, as highlighted by a 2016 US survey in which less than 3% of medical students self-reported a disability.[6] However, this might underrepresent the actual number of US medical students with a disability, as these data were collected from school administrative staff and were self-reported. Although these data cannot be extrapolated to Canadian medical schools, they show that the disparity in representation between physicians and the general population begins at or before medical school training. This should be cause for concern for Canadians, because either our existing medical training programs are failing to provide accessible learning environments for individuals with physical disabilities, or the culture of medicine creates a barrier for applicants with disabilities.

Training more persons with disabilities as physicians is expected to improve health outcomes for patients with disabilities. As an estimated 13.7% of Canada's population reports having a disability,[4] the effect of training physicians with disabilities could lead to substantial improvements in patient health outcomes—similar to scenarios in which physicians and patients are concordant on dimensions of race, ethnicity, or spoken language.[7] Despite this knowledge, applicants with disabilities encounter barriers to entering medical school. Although the spectrum of disabilities as defined by the Americans with Disabilities Act and the Accessible Canada Act is broad, this commentary focuses on individuals with physical disabilities, as recent research indicates that these individuals comprise a small, yet uniquely challenging, proportion of medical students with disabilities.[1]

Various barriers

Those with physical disabilities face environmental barriers within the medical setting. This includes examination rooms that lack space for appropriate navigation and patient examination tables that are unable to be adjusted to the height of a wheelchair. Other environmental barriers, not specific to the medical environment, we have observed include the lack of reliably functioning automatic doors to gain entrance to buildings and a minimal number of washrooms that are both wheelchair accessible and conveniently located.

Other barriers to training physicians with disabilities arise during the application process to medical school. While medical schools do not explicitly bar persons with physical disabilities from applying for admission, because so few successful applicants to medical school have physical disabilities, medical schools lack knowledge on how to accommodate current and future applicants with physical disabilities.[8] We hypothesize that lower numbers of applicants with physical disabilities might be a result of medical schools failing to provide accommodations to them, and not the result of providing preferential treatment to specific student populations. However, implementation of accommodations that employ universal design, such as "curb cuts," will benefit both physically disabled and able-bodied learners.[9]

Non-academic requirements for medical schools, termed *technical standards*, also pose a barrier for physically disabled applicants. These technical standards, deemed essential for participation in a medical education program, include the ability to communicate with patients, make observations, and perform therapeutic interventions and diagnostic maneuvers.[9] Technical standards documentation often neglects to indicate that learners can use accommodations to complete required tasks. As a result, potential applicants might incorrectly assume their disabilities prevent them from matriculating and lose the desire to apply.[9] Currently, there is a debate regarding an update to the current technical standards and whether all trainees should be required to complete all tasks in the medical school curriculum without physical aids. If contemporary surgeons require microscopes or robotic apparatus to complete their procedures, should trainees with physical disabilities not be allowed to use their own physical aids to complete their tasks?[10]

As this debate continues, it also raises questions about the culture of medicine as a barrier to those with physical disabilities.

A proposed barrier to the representation of individuals with disabilities in medical training programs is the prevailing medical culture of stoicism and socialized beliefs surrounding what constitutes a physician.[11] In academic medicine, implicit messages that students with disabilities "do not belong" emerge from institutional policies, customs, and rituals known as the *hidden curriculum* of medical school. This theoretical hidden curriculum is informed by everyday practices in schools or hospitals that discourage trainees from asking for help or missing shifts or class.[1] There is a socialized belief that physicians are impermeable to illness, and young trainees face the additional assumption that they are unlikely to have medical problems.[1] Physical disability is often portrayed in medical discourse as a problem to be fixed and carries with it the assumption of dependence, dysfunction, and illness.[12] This image evidently does not comport with the expectations of a physician expressed above and fosters a mentality that those with physical disabilities belong on the "other side" of medicine.[1] Research suggests that most students with disabilities in medical education are apprehensive about disclosing the disability owing to fear of judgment, bias, and skewed perceptions of their abilities.[13] Frequent and subtle microaggressions have also been reported, such as derogatory comments about disability accommodations made by medical staff or peers who were not aware of a student's disability. In practice, medical trainees with disabilities report feeling undervalued and misrepresented, and frequently have to legitimize themselves as good students and competent future practitioners.[14] Their lived experiences reflect the pervasive stigma associated with disability in medicine and the additional efforts they must make to belong. To enable fair representation of individuals with disabilities in medical training programs, conscious efforts must be made to promote a medical school culture that includes and values students with disabilities. An example of such efforts includes the Coalition for Disability Access in Health Science Education (**www.hsmcoalition.org**)—a collaboration attempting to improve student experiences through disability accommodation. This coalition focuses its efforts on graduate health science and medical education programs. While impressive, the formation of this coalition also demonstrates that other facets of science and education are likely lacking similar programs and can build upon this initiative to develop their own collaborative groups.

Medical students' perceptions of medical professionals with disabilities

The discrepancy between individuals in the general population with disabilities and physicians with disabilities is concerning (13.7% and 11.2%, respectively).[4] Although Canadian data suggest that the reported differences are more favourable than in the US, there are no data from the Canadian medical school student body. While the differences in disability reporting among physicians might be caused by a multitude of factors including a lack of support from universities, we—as medical students currently navigating the Canadian medical school curriculum—believe that the perceived capacity of medical professionals with disabilities is contributory to their acceptance within the medical community.

To help us provide evidence of altered perceived capacity for various physicians, we polled the medical student body at the University of Calgary in Alberta in September 2017 (n = 116) and asked whether students would be comfortable with their family physician, surgeon, or obstetrician being in a wheelchair. We contacted the University of Calgary medical student body using the dedicated list server e-mail addresses for each class and collected anonymous responses using the online SurveyMonkey platform. The response rate for our survey was 25% of the total student body, and of the 116 respondents, 78% were preclerkship students and the remaining 22% were clerkship students. Interestingly, 95% of responding students were comfortable with their family physician being in a wheelchair, but this value fell to 72% and 69% for their surgeon and obstetrician, respectively (**Table 1**). These informal polling results demonstrate that the perception of decreased capacity of physicians with disabilities exists among Canadian medical students and that the physician subspecialty might affect this perception. This information is valuable to identify that medical students are likely entering their training with these preconceptions, as opposed to exclusively developing them later (during residency, as a practising physician). Specifically, knowledge of these perceptions can inform changes to the Canadian medical school curriculum to better educate the next generation of Canadian physicians and shift the existing stigmatizing culture around disabilities in medicine.

Exposure to medicine's culture

Currently, the medical school curriculum at the University of Calgary incorporates a population health course at the beginning of the first year of training. This 3-block

Table 1. Respondents' answers to the question, "Would you be comfortable with your family physician, surgeon, or obstetrician being in a wheelchair?": *N = 116.*

	PRECLERKSHIP STUDENTS, N (%)		CLERKSHIP STUDENTS, N (%)	
PHYSICIANS	NO	YES	NO	YES
Family physician	5 (4)	85 (73)	1 (1)	25 (22)
Surgeon	26 (22)	64 (55)	6 (5)	20 (17)
Obstetrician	30 (26)	60 (52)	6 (5)	20 (17)

course, spanning 2 years, explores the core concepts of population health in Canada and across the world, providing students with a foundation of health knowledge to better illustrate unique populations to the medical community. While useful in exposing undifferentiated medical students to the breadth of populations that Canadian physicians care for, there is no formal discussion or teaching regarding the culture within the medical community. As current medical students, we suggest that exposure and discussion around the culture in medicine would enable incoming medical students to adapt their own opinions before they are exposed to the social influences of the greater medical community. Likely imparted through the majority effect,[15] the influence of medical culture undoubtedly has an effect on the beliefs and opinions of trainees and practising physicians. As evidence suggests that accessibility and the culture of medicine act as barriers to individuals with physical disabilities, the Canadian medical system should acknowledge these pitfalls and more comprehensively address these factors in both educational and infrastructure developments.

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Competing interests
None declared

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